

A hydrogen chloride gas and an ammonia gas are introduced with a carrier gas into a reactor in which a substrate and at least an aluminum metallic material through conduits. Then, the hydrogen gas and the ammonia gas are heated by heaters, and thus, a III-V nitride film including at least Al element is epitaxially grown on the substrate by using a Hydride Vapor Phase Epitaxy method.

The whole of the reactor is made of an aluminum nitride material which does not suffer from the corrosion of an aluminum chloride gas generated by the reaction of an aluminum metallic material with a hydrogen chloride gas.